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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/697,318

10/31/2003

Kiyonori Watanabe

OHG 144

8511

23995

7590

11/10/2005

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EXAMINER

WEISS, HOWARD

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 11/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/697,318	WATANABE, KIYONORI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Howard Weiss	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-11, 13-17 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-11, 13-17 and 19-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

Attorney's Docket Number: OHG 144

Filing Date: 10/31/03

Continuing Data: none

Claimed Foreign Priority Date: 11/8/02 (JPX)

Applicant(s): Watanabe

Examiner: Howard Weiss

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 to 3, 5, 6, 9 to 11, 13, 16 to 17 and 21 to 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (U.S. Patent No. 6,222,259) Tokuda et al. (U.S. Patent No. 5,870,289) and Kato et al. (U.S. Patent No. 6,220,764).

Park et al. show most aspects of the instant invention (e.g. Figures 1 and 10) including:

- a base **80**
- an insulating extension **50** having a concave portion with inclined inside walls **52**
- a semiconductor chip **30** within said concave portion and with a plurality of electrode pads **31** on a first surface, a second surface and side surfaces
- a plurality of wiring patterns **100** connected as claimed and wider or more thickly in the areas claimed
- a sealing portion **120** formed on said wiring pattern
- a plurality of external terminals **150** made of solder balls

Park et al. do not show a silicon substrate constituting said base and in contact with said chip, an insulating and surface protection film formed on said first surface, on

said side surfaces and said extension portion such as to expose said electrode pads and conductive posts connected to said pads and posts having the insulating film on a surface of said posts.

Tokuda et al. teach (e.g. Figure 4) to form an insulating **250** and surface protection **230** film on a semiconductor chip **210** and an extension portion **260** such as to expose electrode pads **11** and conductive posts **240** connected to said pads and posts having the insulating film on a surface of said posts to provide an inexpensive means to connect wires and pads (Column 3 Lines 37 to 40). It would have been obvious to a person of ordinary skill in the art at the time of invention to form an insulating and surface protection film on a semiconductor chip and an extension portion such as to expose electrode pads and conductive posts connected to said pads and posts having the insulating film on a surface of said posts as taught by Tokuda et al. in the device of Park et al. to provide an inexpensive means to connect wires and pads.

Kato et al. teach (i.e. Figures 1) teach to use a silicon substrate **40** in contact with a chip **30** because it enhances the heat dissipation of the device (Column 19 Lines 1 to 7). It would have been obvious to a person of ordinary skill in the art at the time of invention to use a silicon substrate in contact with a chip as taught by Kato et al. in the device of Park et al. because it enhances the heat dissipation of the device.

3. Claims 7, 8, 14, 15, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al., Tokuda et al. and Kato et al., as applied to Claims 1, 9 and 16 above, and further in view of Yamaguchi et al. (JP 2000-124354 A).

Park et al., Tokuda et al. and Kato et al. show most aspects of the instant invention (Paragraph 2) except for the extension portion being made of an insulating resin having the properties claimed. Yamaguchi et al. teach (e.g. Figures 1) to make an extension portion **3** of an insulating resin to be able to position the wiring pattern with

high accuracy (see Solution). It would have been obvious to a person of ordinary skill in the art at the time of invention to make an extension portion of an insulating resins taught by Yamaguchi et al. in the device of Park et al., Tokuda et al. and Kato et al. to be able to position the wiring pattern with high accuracy.

### ***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1 to 3 and 6 to 11, 13 to 17, 19 and 20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 to 10 of copending Application No. 10/722,446 and in view of Kato et al. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant invention's claims are broader than the copending Application No. 10/722,446's claims. However, claims 1 to 10 of copending Application No. 10/722,446 do not show the base to consist of a silicon substrate. Kato et al. teach (i.e. Figures 1) to use a silicon substrate **40** because it enhances the heat dissipation of the device (Column 19 Lines 1 to 7). It would have been obvious to a person of ordinary skill in the art at the time of invention to use a silicon substrate as taught by Kato et al. in the device of claims 1

to 10 of copending Application No. 10/722,446 because it enhances the heat dissipation of the device.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

6. Claims 1 to 3 and 5 to 8 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 to 9 of copending Application No. 10/697,247 and in view of Kato et al. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant invention's claims are broader than copending Application No. 10/697,247's claims. However, claims 1 to 10 of copending Application No. 10/697,247 do not show the base to consist of a silicon substrate. Kato et al. teach (i.e. Figures 1) teach to use a silicon substrate **40** because it enhances the heat dissipation of the device (Column 19 Lines 1 to 7). It would have been obvious to a person of ordinary skill in the art at the time of invention to use a silicon substrate as taught by Kato et al. in the device of claims 1 to 10 of copending Application No. 10/697,247 because it enhances the heat dissipation of the device.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

#### ***Response to Arguments***

7. Applicant's arguments with respect to Claims 1 to 3, 5 to 11, 13 to 17 and 19 to 23 have been considered but are moot in view of the new ground(s) of rejection. Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). "A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some

other product for the same use." *In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994).

In response to applicant's argument that there is no expectation for success in the combination of references, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reasons for combining the references are as stated in the rejection above.

In reference to Yamaguchi et al., the reasons for combining are found in the reference as stated in the rejection above. There is no question to an administration delay in the double patenting rejections.

For these reasons and those set forth in the rejections above, the stated claims remain rejected.

### **Conclusion**

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).
10. Paper copies of cited U.S. patents and U.S. patent application publications will cease to be mailed to applicants with Office actions as of June 2004. Paper copies of foreign patents and non-patent literature will continue to be included with office actions. These cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants are referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 for information on this



policy. Requests to restart a period for response due to a missing U.S. patent or patent application publications will not be granted.

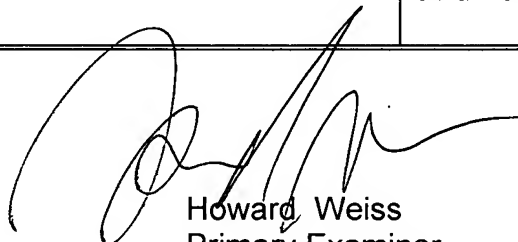
11. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(703) 872-9306**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(571) 272-1720** and between the hours of 7:00 AM to 3:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via [Howard.Weiss@uspto.gov](mailto:Howard.Weiss@uspto.gov).

13. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/ 701, 734; 438/126	thru 10/31/05
Other Documentation: none	
Electronic Database(s): EAST	thru 10/31/05

HW/hw  
1 November 2005

  
Howard Weiss  
Primary Examiner  
Art Unit 2814